

AMENDMENTS TO THE ABSTRACT:

Please delete the abstract and insert the attached substitute abstract after the claims.

A data processing apparatus has a processor operable to execute instructions, and a prefetch unit operable to prefetch instructions from a memory prior to sending those instructions to the processor for execution. A return stack is also provided which is accessible by the prefetch unit and operable to hold one or more addresses. Prediction logic is provided which is operable, if the prefetched instruction is a conditional instruction, to predict whether that prefetched instruction will be executed by the processor, the prefetch logic being operable to determine the fetch address dependent on the prediction from the prediction logic. In the event that the prefetched instruction is a first type of instruction flow changing instruction and is conditional, and if the prediction logic predicts that that prefetched instruction will be executed, the prefetch logic is operable to determine as the fetch address an address obtained from the return stack.